Aim for Algebra

Not business as usual.

Presentation by Mardi Gale
mgale@wested.org

Interactive Format

Quick polling

Open responses

Breaks for responding to chat questions & comments

Participants on just the teleconference can email questions to: eventquestion@wested.org

Handout

Throughout the presentation, we will be referring to a handout that can be downloaded from the SchoolsMovingUp website.

This handout will provide improved images of slides included in the Power Point presentation.

Who is in this webinar?

Site or district administrator

Teacher (classroom or resource)

Secondary mathematics teacher

EL coordinator

Community member

Higher education staff

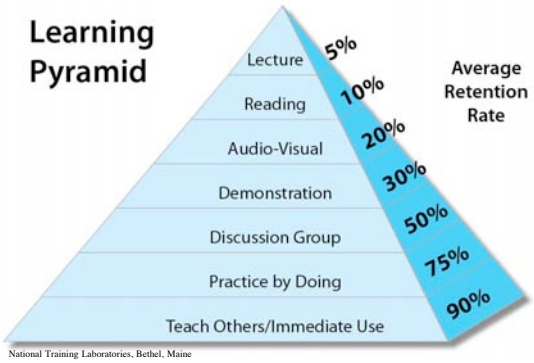
SEA staff

Other (type in the chat area)

"Frank was never any good at arithmetic. He left a third of his money to me, a third to you, a third to Cindy, and a third to Matt."

High achieving students spend more time on concepts and applications and cover more topics.

Students working below grade level receive curriculum heavy on review and drill with a minimum amount of new content.



Effective Universal Access Strategies

Connect to prior knowledge
- Graphic organizers
- Concept webs
- Show-and-tell
- Asking questions
- K-W-L (what you know, what you want to know, what you have learned)

Hands-on experiences
- Manipulatives
- Body language — pantomime, role play
- TPR (Total Physical Response)

Visuals
- Graphic organizer
- Modeling and demonstration
- Using physical models
- Tableau (students interpret from text)

Preview new vocabulary
- Word Wall
- Picture Dictionary

Comprehensible input
- Linking to familiar contexts
- Instructing in small groups
- Using language effectively: intonation, pauses, rephrases, repetition, simplified vocabulary, familiar vocabulary
- Use consistent language when writing word problems

Small group interaction
- Pairs/groups cooperative activities
- Peer questioning
- Jigsaw activities

Low anxiety environment
- Positive reinforcement
- Students use L1 (primary language)

Which way?

Poll: Intervention Curriculum

Does your school have an algebra intervention curriculum?

Yes or No?

Essential Elements

- Targeted, not comprehensive CURRICULUM
- CONCEPTUALLY based and standards ALIGNED
- FLEXIBLE format and structure
- Embedded INSTRUCTION
- Purposeful task DEVELOPMENT
- Precise, academic LANGUAGE and concrete MODELS
- ASSESSMENT, pre/post and embedded
- Facilitator guides for instructor SUPPORT

Aim for Algebra was developed at **WestEd** by experts in the field of mathematics education.

The program is a **coherent** set of materials, **conceptual** in nature, rather than a collection of individual worksheets on isolated topics.

Our curriculum focuses on **key "trouble spots" in algebra** that typically cause difficulty because:

- students lack prerequisites,
- students have misconceptions about the content, or
- the material is complex and students need more time and practice with the topic.

Aim for Algebra is a standards-aligned, concept-based support curriculum developed by WestEd with funding from the **U.S. Department of Education's Institute of Education Sciences** under PR/Award #R305K040003.

Essential Elements

- Targeted, not comprehensive CURRICULUM

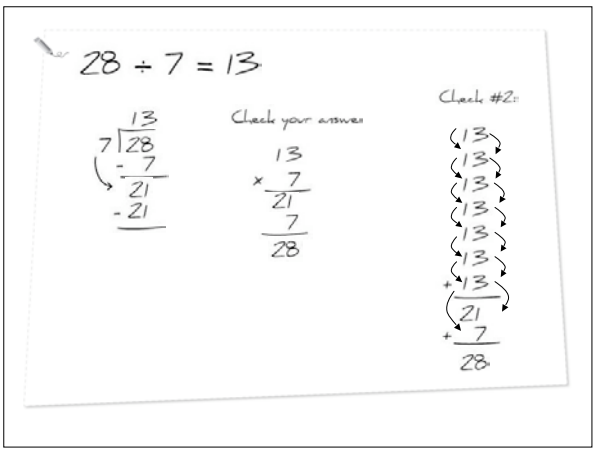
Modules

Essential Elements

- Targeted, not comprehensive CURRICULUM
- CONCEPTUALLY based and standards ALIGNED

Think about what a student might do to find this result:

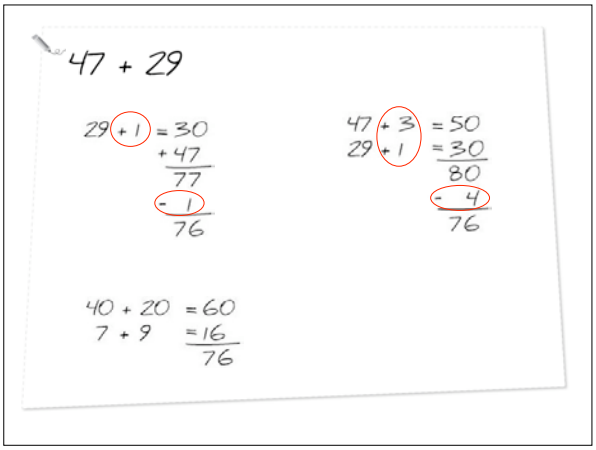
28 ÷ 7 = 13

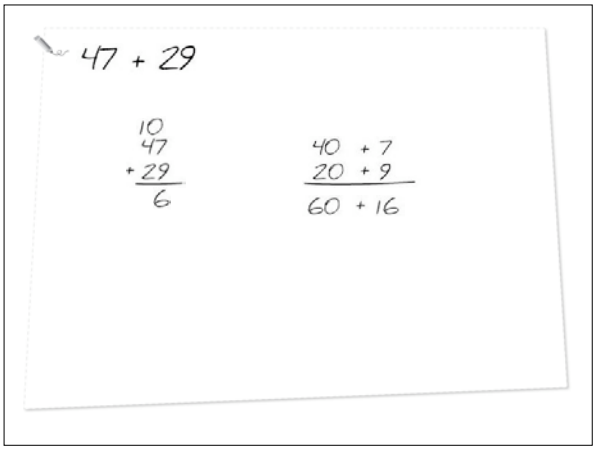


47 + 29

Add 47 and 29 mentally
(no paper and pencil).

Think about what strategy you use.

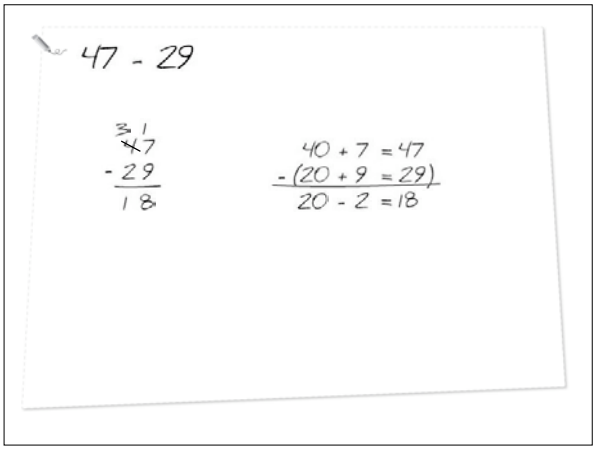




47 – 29

Subtract 29 from 47 mentally.

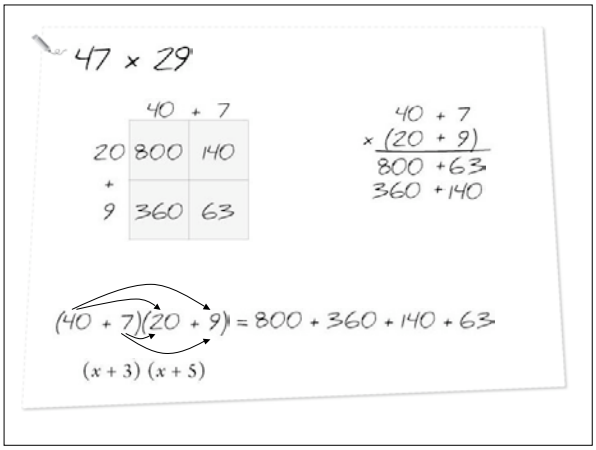
Think about what strategy you use.



47 x 29

Multiply 47 and 29 mentally.

Think about what strategy you use.



Poll

Do you have any questions or comments about the information presented so far?

Essential Elements

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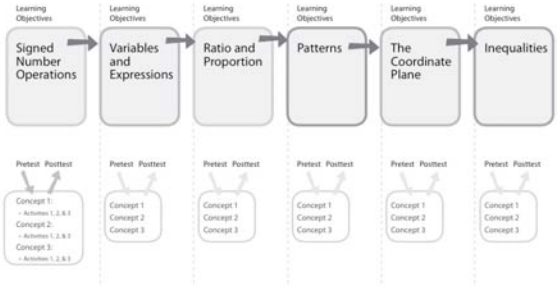
- CONCEPTUALLY based and standards ALIGNED
- FLEXIBLE format and structure

Poll: Challenges

What are some of the challenges as you consider implementing an algebra intervention program?

Aim for Algebra



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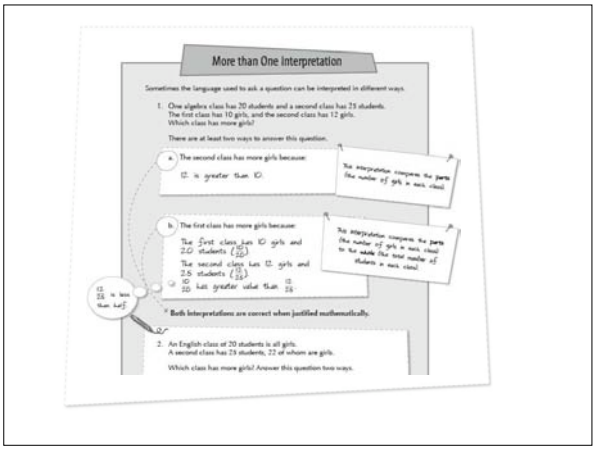

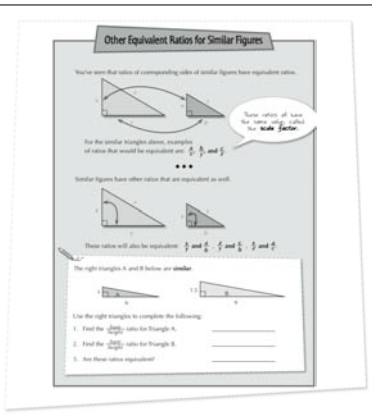

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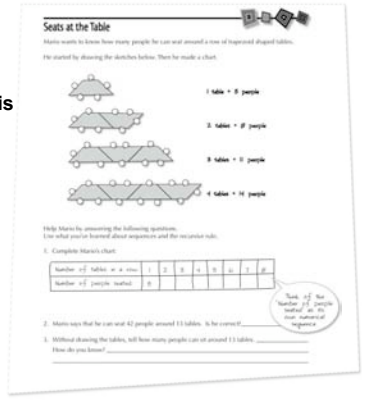
- Purposeful task DEVELOPMENT

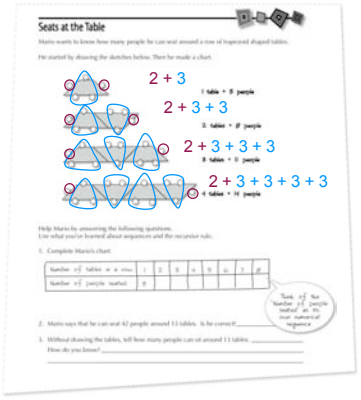
Take a few minutes to work on this activity sheet in your handout packet.



How does the number of tables relate to the number of addends of 3?

2 + 3t

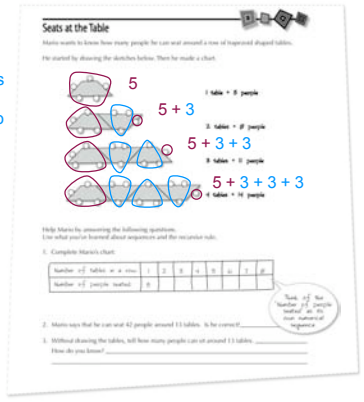
Number of tables



Now how does the number of tables relate to the number of addends of 3?

5 + 3(t – 1)

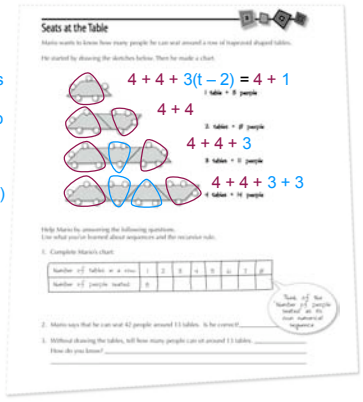
Number of tables less 1



Now how does the number of tables relate to the number of addends of 3?

4 + 4 + 3(t – 2)

Number of tables less 2



Different ways students describe how the pattern grows:

2 + 3t

3t + 2

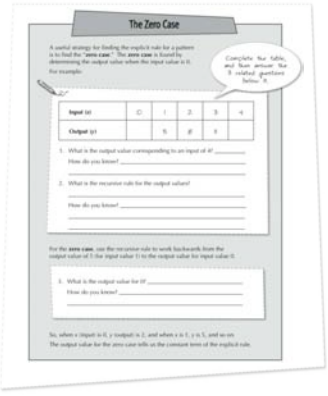
5 + 3(t – 1)

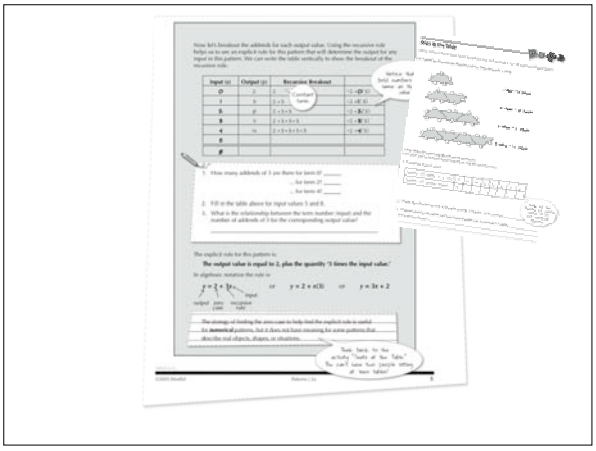
4 + 4 + 3(t – 2)

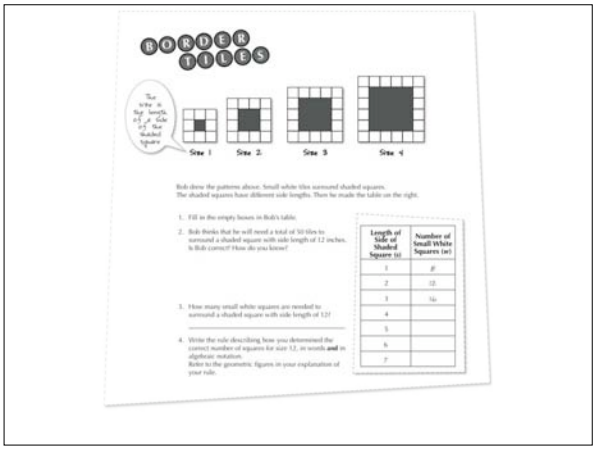
8 + 3(t – 2)

5t – 2(t – 1)

Reconcile







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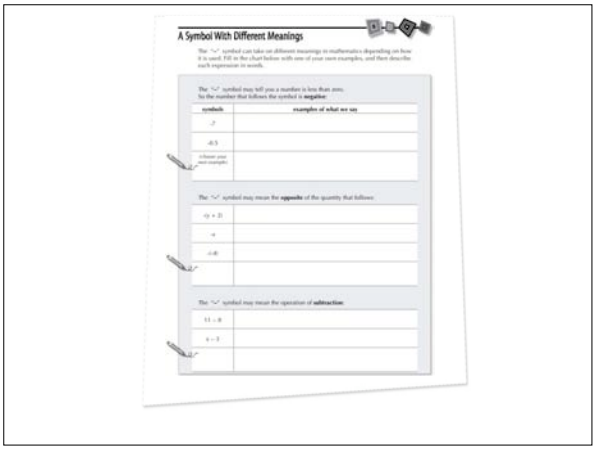
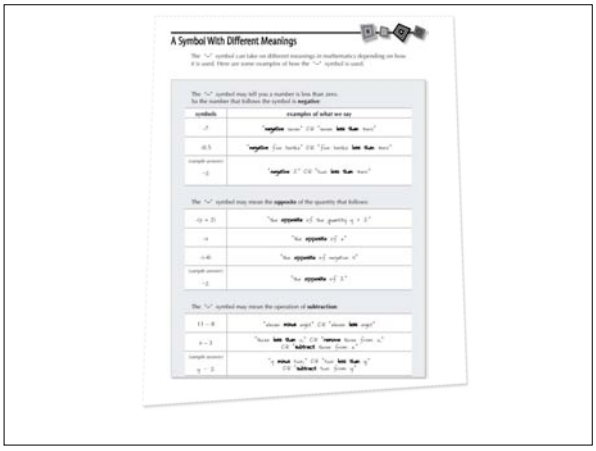
Poll:

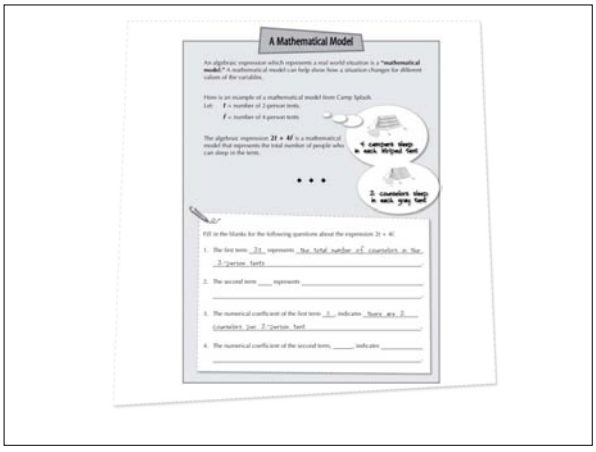
Which is the largest number?

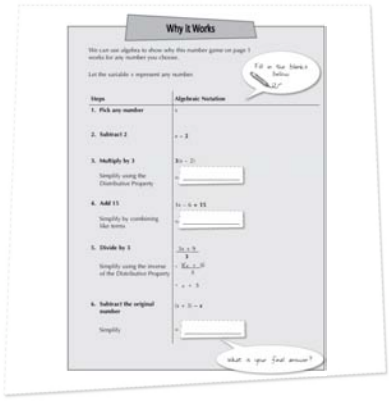
4 -7


A Symbol With Different Meanings


A Symbol With Different Meanings


Express Your Age
Nora and Max


A Mathematical Model



Poll:
Precise Language

How do you see precise language and modeling reflected in the programs in your mathematics classrooms?

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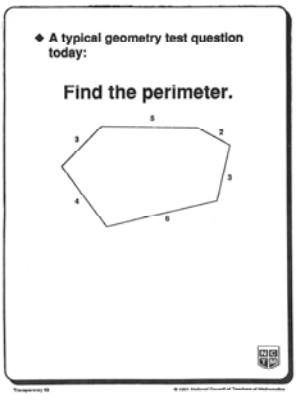
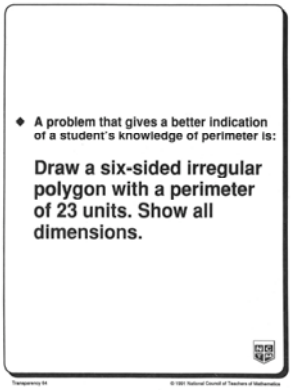
Poll:

How could you correctly answer this question without knowing what perimeter is?





Sources of Assessment Items

- Linked directly to instruction
- Includes items from national exams, such as NAEP and TIMSS
- Includes items adapted from state standard exams and state exit exams

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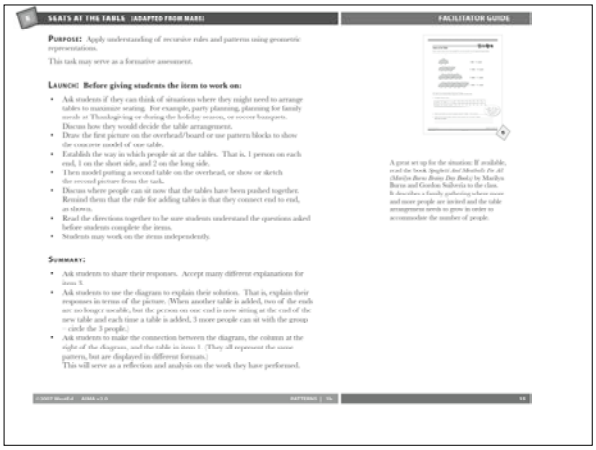

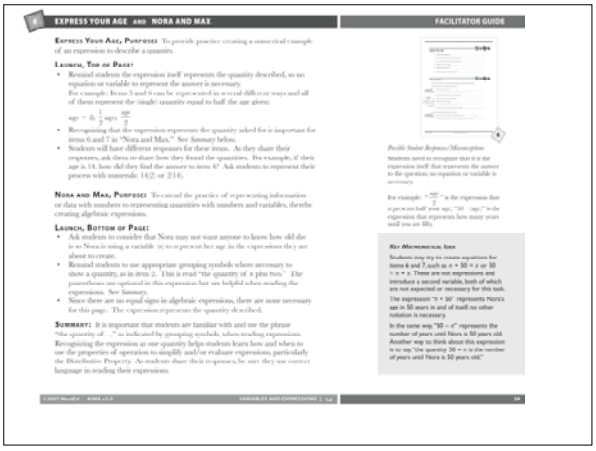
EXPRESS YOUR AGE AND NORA AND MAX

FACILITATOR GUIDE

Poll:

For your student population, how might you prioritize these essential elements as you search for an intervention curriculum?

Presentation by Mardi Gale

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kviviani@wested.org

Its About Time
www.its-about-time.com/aim/aim.html

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- NumberTheoryforAlgebra
- Exponents
- Rational Numbers
- SignedNumberOperations
- Ratio and Proportion
- Variables and Expressions
- Equations and Formulas
- Data and Probability
- Proportional Reasoning
- Patterns
- The Coordinate Plane
- Inequalities

Next Steps

Archive:
http://www.schoolsmovingup.net/webinars/algebra

Feedback:
http://www.surveymonkey.com/s.aspx?sm=X4tPDEM9WgL_2fShZwpf7epQ_3d_3d